This listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1-7. (Cancelled)

8. (Currently Amended) Surface according to claim ~~6~~ 14, wherein said surface is selected from the group consisting of a SiO_2 surface of a silicon wafer, glass, quartz, fused silica, gold and a polymer.

9-13. (Cancelled)

14. (Currently Amended) ~~Surface according to claim 11~~

A surface carrying a linker system comprising a compound for activating surfaces for bioconjugation having the following general formula (I):

$$X\text{-}[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k\text{-}Z \quad (I)$$

wherein:

X is a reactive group capable of covalently binding to a surface and is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, a group capable of forming free radicals on exposure to light, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof;

Z is a reactive group capable of covalently binding to a biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group;

X is not Z;

Y_1 and Y_2 are, independently from each other, CR_1R_2;

R_1 and R_2 are, independently from each other, H, C_1-C_4 alkyl, C_1-C_4 alkoxy or C_1-C_4 acyloxy;

i, j, and k are, independently from each other, an integer in the range from 1 to 10;

the total number of C atoms in Y_1 and Y_2, the C atoms of R_1 and R_2 not included, is in the range of 2 to 100;

Q is a hydrophilic atom or group selected from the group consisting of O, NH, C=O, O-C=O and CR_3R_4;

R_3 and R_4 are, independently from each other, selected from the group consisting of H, OH, C_1-C_4 alkoxy and C_1-C_4 acyloxy; and

R_3 and R_4 are not H at the same time;

wherein when Q = NH, Z is not NH_2;

wherein when k > 1, the Q's for each $[(Y_1)_i$-Q-$(Y_2)_j]_k$ are independently selected from each other; and

wherein the linker system is covalently bonded to a biomolecule

wherein said biomolecule is a partner of a specifically interacting system of complementary binding partners;

wherein said specifically interacting system of complementary binding partners is based on nucleic acid/complementary nucleic acid, peptide nucleic acid/nucleic acid, enzyme/substrate, receptor/effector, lectin/sugar, antibody/antigen, avidin/biotin or strept-avidin/biotin interaction; and

wherein said antibody is a polyclonal, monoclonal, chimeric or single-chain antibody or a functional fragment or derivative of such antibodies.

15. (Currently Amended) Process for the detection of a biomolecule which is a partner of a specifically interacting system of complementary binding partners, comprising the steps of:

a) contacting a surface ~~according to claim 10~~ with a sample suspected to contain the complementary binding partner,

b) removing non-specifically bound sample components in a washing step, and

c) detecting specifically bound sample components;

wherein the surface carries a linker system comprising a compound for activating surfaces for bioconjugation having the following general formula (I):

$$X\text{-}[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k\text{-}Z \quad (I)$$

wherein:

X is a reactive group capable of covalently binding to a surface and is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, a group capable of forming free radicals on exposure to light, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof;

Z is a reactive group capable of covalently binding to the biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group;

X is not Z;

Y_1 and Y_2 are, independently from each other, CR_1R_2;

R_1 and R_2 are, independently from each other, H, C_1-C_4 alkyl, C_1-C_4 alkoxy or C_1-C_4 acyloxy;

i, j, and k are, independently from each other, an integer in the range from 1 to 10;

the total number of C atoms in Y_1 and Y_2, the C atoms of R_1 and R_2 not included, is in the range of 2 to 100;

Q is a hydrophilic atom or group selected from the group consisting of O, NH, C=O, O-C=O and CR_3R_4;

R_3 and R_4 are, independently from each other, selected from the group consisting of H, OH, C_1-C_4 alkoxy and C_1-C_4 acyloxy; and

R_3 and R_4 are not H at the same time;

wherein when Q = NH, Z is not NH_2;

wherein when $k > 1$, the Q's for each $[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k$ are independently selected from each other; and

wherein the linker system is covalently bonded to the biomolecule and said biomolecule is a partner of a specifically interacting system of complementary binding partners.

16. (Previously Presented) Process according to claim 15 wherein for said detecting, a colored, fluorescent, bioluminescent, chemoluminescent, phosphorescent or radioactive label; an enzyme; an antibody or a functional fragment or derivative thereof, a protein A/gold based system; a biotin/avidin/streptavidin based system; or an enzyme electrode based system is used.

17. (Currently Amended) Process for the isolation of a biomolecule which is a partner of a specifically interacting system of complementary binding partners, comprising the steps of:

a) contacting a surface ~~according to claim 10~~ with a sample suspected to contain the biomolecule complementary binding partner,

b) removing non-specifically bound sample components in a washing step, and, optionally,

c) eluting specifically bound sample components;

wherein the surface carries a linker system comprising a compound for activating surfaces for bioconjugation having the following general formula (I):

$$X\text{-}[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k\text{-}Z \quad (I)$$

wherein:

X is a reactive group capable of covalently binding to a surface and is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, a group capable of forming free radicals on exposure to light, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof;

Z is a reactive group capable of covalently binding to the biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group;

X is not Z;

Y_1 and Y_2 are, independently from each other, CR_1R_2;

R_1 and R_2 are, independently from each other, H, C_1-C_4 alkyl, C_1-C_4 alkoxy or C_1-C_4 acyloxy;

i, j, and k are, independently from each other, an integer in the range from 1 to 10;

the total number of C atoms in Y_1 and Y_2, the C atoms of R_1 and R_2 not included, is in the range of 2 to 100;

Q is a hydrophilic atom or group selected from the group consisting of O, NH, C=O, O-C=O and CR_3R_4;

R_3 and R_4 are, independently from each other, selected from the group consisting of H, OH, C_1-C_4 alkoxy and C_1-C_4 acyloxy; and

R_3 and R_4 are not H at the same time;

wherein when Q = NH, Z is not NH_2;

wherein when $k > 1$, the Q's for each $[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k$ are independently selected from each other; and

wherein the linker system is covalently bonded to the biomolecule and the biomolecule is a partner of a specifically interacting system of complementary binding partners.

18. (Currently Amended) A method of affinity chromatography comprising the steps of:

providing a surface ~~according to claim 10~~ as an affinity matrix; and

performing affinity chromatography with the affinity matrix;

wherein the surface carries a linker system comprising a compound for activating surfaces for bioconjugation having the following general formula (I):

$$X\text{-}[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k\text{-}Z \quad (I)$$

wherein:

X is a reactive group capable of covalently binding to a surface and is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, a group capable of forming free radicals on exposure to light, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof;

Z is a reactive group capable of covalently binding to a biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions

or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group;

X is not Z;

Y_1 and Y_2 are, independently from each other, CR_1R_2;

R_1 and R_2 are, independently from each other, H, C_1-C_4 alkyl, C_1-C_4 alkoxy or C_1-C_4 acyloxy;

i, j, and k are, independently from each other, an integer in the range from 1 to 10;

the total number of C atoms in Y_1 and Y_2, the C atoms of R_1 and R_2 not included, is in the range of 2 to 100;

Q is a hydrophilic atom or group selected from the group consisting of O, NH, C=O, O-C=O and CR_3R_4;

R_3 and R_4 are, independently from each other, selected from the group consisting of H, OH, C_1-C_4 alkoxy and C_1-C_4 acyloxy; and

R_3 and R_4 are not H at the same time;

wherein when Q = NH, Z is not NH_2;

wherein when $k > 1$, the Q's for each $[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k$ are independently selected from each other; and

wherein the linker system is covalently bonded to a biomolecule and the biomolecule is a partner of a specifically interacting system of complementary binding partners.

19. (Currently Amended) A method of detecting a biomolecule comprising the steps of:

providing a sensor chip or biochip comprising a surface ~~according to claim 10~~; and detecting a biomolecule with the sensor chip or biochip;

wherein the surface carries a linker system comprising a compound for activating surfaces for bioconjugation having the following general formula (I):

$$X\text{-}[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k\text{-}Z \quad (I)$$

wherein:

X is a reactive group capable of covalently binding to a surface and is selected from the group consisting of a SiW_3 group with W being a hydrolyzable atom or group, a group capable of forming free radicals on exposure to light, an anthrathione group or a derivative thereof, an anthraquinone group or a derivative thereof, and a benzophenone group or a derivative thereof;

Z is a reactive group capable of covalently binding to a biomolecule, is capable of nucleophilic substitution reactions, nucleophilic addition reactions, Diels-Alder reactions or radical substitutions, and is selected from the group consisting of a diene group, a dienophilic group, an aldehyde group, a hydroxyl group, a carboxylic acid group, an active ester group, an amino group, a thiol group, an aziridine group, an isocyanate group, an isothiocyanate group, an azide group, and a reactive leaving group;

X is not Z;

Y_1 and Y_2 are, independently from each other, CR_1R_2;

R_1 and R_2 are, independently from each other, H, C_1-C_4 alkyl, C_1-C_4 alkoxy or C_1-C_4 acyloxy;

i, j, and k are, independently from each other, an integer in the range from 1 to 10;

the total number of C atoms in Y_1 and Y_2, the C atoms of R_1 and R_2 not included, is in the range of 2 to 100;

Q is a hydrophilic atom or group selected from the group consisting of O, NH, C=O, O-C=O and CR_3R_4;

R_3 and R_4 are, independently from each other, selected from the group consisting of H, OH, C_1-C_4 alkoxy and C_1-C_4 acyloxy; and

R_3 and R_4 are not H at the same time;

wherein when Q = NH, Z is not NH_2;

wherein when $k > 1$, the Q's for each $[(Y_1)_i\text{-}Q\text{-}(Y_2)_j]_k$ are independently selected from each other; and

wherein the linker system is covalently bonded to a biomolecule and the biomolecule is a partner of a specifically interacting system of complementary binding partners.

20. (Currently Amended) Medical or diagnostic instrument comprising a surface according to claim ~~10~~14.

21. (Cancelled)

22. (Cancelled)

23. (Currently Amended) The method of claim ~~22~~15, wherein said surface comprises a silicon oxide or gold.